

5 Abstract

An aluminium alloy having high mechanical strength and low quench sensitivity contains 4.6 to 5.2 wt. % Zn, 2.6 to 3.0 wt. % Mg, 0.1 to 0.2 wt. % Cu, 0.05 to 0.2 wt. % Zr, max. 0.05 wt. % Mn, max. 0.05 wt. % Cr, max. 0.15 wt. % Fe, max. 0.15 wt. % Si, max. 0.10 wt. % Ti and aluminium as the remainder along with production related impurities, individually max. 0.05 wt. %, in total max. 0.15 wt. %. A preferred process for producing plates having a thickness of more than 300 mm for manufacturing moulds for injection-moulding plastics is made up of the following steps viz., continuous casting the alloy into ingots having a thickness greater than 300 mm, heating the ingots to a temperature of 470 to 490°C with a max. heating rate of 20°C/h between 170 and 410°C, homogenising the ingots for 10 to 14 h at a temperature of 470 to 490°C, cooling the ingots in still air to an intermediate temperature of 400 - 410°C, cooling the ingots by means of forced air cooling from the intermediate temperature of 400 - 410°C to a temperature of less than 100°C, cooling the ingots to room temperature, artificially age-hardening the ingots at elevated temperature. The artificially age-hardened ingots can be employed for manufacturing moulds for injection-moulding plastics.

(Fig. 1)